Title (en)

ZIEGLER-NATTA-METALLOCENE DUAL CATALYST SYSTEMS WITH ACTIVATOR-SUPPORTS

Title (de)

DUALE ZIEGLER-NATTA-METALLOCENKATALYSATORSYSTEME MIT AKTIVATORTRÄGERN

Title (fr)

SYSTÈMES CATALYTIQUES DOUBLES DE TYPE ZIEGLER-NATTA/MÉTALLOCÈNE PRÉSENTANT DES SUPPORTS D'ACTIVATEUR

Publication

EP 3320004 B2 20231206 (EN)

Application

EP 16739324 A 20160628

Priority

- US 201562189770 P 20150708
- US 2016039856 W 20160628

Abstract (en)

[origin: WO2017007640A1] Catalyst systems having both a metallocene catalyst component and a Ziegler-Natta component are disclosed. Such catalyst systems can contain a metallocene compound, an activator-support, an organoaluminum compound, and a Ziegler-Natta component comprising titanium supported on magnesium chloride.

IPC 8 full level

C08F 210/16 (2006.01); **C08F 4/659** (2006.01)

CPC (source: CN EP KR US)

C08F 2/01 (2013.01 - KR); **C08F 4/6423** (2013.01 - KR); **C08F 4/65904** (2013.01 - KR); **C08F 4/65916** (2013.01 - KR); **C08F 4/6592** (2013.01 - KR); **C08F 210/02** (2013.01 - KR US); **C08F 210/16** (2013.01 - CN EP KR US); C08F 4/65912 (2013.01 - EP US); C08F 4/65916 (2013.01 - EP); C08F 2410/07 (2021.01 - EP); C08F 2500/12 (2013.01 - KR); C08F 2500/17 (2013.01 - KR)

C-Set (source: CN EP US)

CN

1. **C08F 210/16** + **C08F 4/65925**
2. **C08F 210/16** + **C08F 210/14**

EP US

1. **C08F 210/16** + **C08F 4/65904**
2. **C08F 210/16** + **C08F 4/6592**
3. C08F 210/16 + C08F 210/14 + C08F 2500/12 + C08F 2500/17
4. C08F 110/02 + C08F 2500/12 + C08F 2500/17

Citation (opposition)

Opponent :

- WO 2006045737 A1 20060504 - TOTAL PETROCHEMICALS RES FELUY [BE], et al
- WO 2006096319 A2 20060914 - UNIVATION TECH LLC [US], et al

Cited by

WO2021043678A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2017007640 A1 20170112; BR 112017026907 A2 20180814; BR 112017026907 B1 20220426; BR 122022002320 B1 20230131; CA 2989918 A1 20170112; CA 2989918 C 20230801; CA 3194571 A1 20170112; CA 3194571 C 20231205; CN 107849177 A 20180327; CN 115141300 A 20221004; EP 3320004 A1 20180516; EP 3320004 B1 20200812; EP 3320004 B2 20231206; EP 3760653 A1 20210106; ES 2829231 T3 20210531; ES 2829231 T5 20240523; FI 3320004 T4 20240126; KR 102509503 B1 20230313; KR 102637868 B1 20240216; KR 20180028409 A 20180316; KR 20230038608 A 20230320; MX 2017016934 A 20180410; US 10435492 B2 20191008; US 10927201 B2 20210223; US 2017008984 A1 20170112; US 2017283521 A1 20171005; US 2018162970 A1 20180614; US 2019382514 A1 20191219; US 9718907 B2 20170801; US 9926393 B2 20180327

DOCDB simple family (application)

US 2016039856 W 20160628; BR 112017026907 A 20160628; BR 122022002320 A 20160628; CA 2989918 A 20160628; CA 3194571 A 20160628; CN 201680039820 A 20160628; CN 202210936720 A 20160628; EP 16739324 A 20160628; EP 20184061 A 20160628; ES 16739324 T 20160628; FI 16739324 T 20160628; KR 20177035719 A 20160628; KR 20237008247 A 20160628; MX 2017016934 A 20160628; US 201615194622 A 20160628; US 201715622114 A 20170614; US 201815890524 A 20180207; US 201916554784 A 20190829